ANTIOXIDANT SEREENING OF AVOCADO LEAVES

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Introduction. Many traditional Mexican plants possess not only important nutritional value, but, due to their content of antioxidant, may also have therapeutic and chemopreventive properties. The naturally occurring compounds in food plants could be useful in the treatment of diverse chronic or degenerative diseases (1). It has been reported that different parts of the avocado plant possess medicinal properties; for example, the aqueous leaf extract has analgesic and anti-inflammatory, anticonvulsant, hypoglycaemic and hypocholesterolaemic effect (2). Antioxidants are now increasingly sought in the human diet because of their benefits on health. Coronary heart diseases, ulcers and neurodegenerative diseases, besides overall ageing, are but a few examples of diseases and conditions that can be prevented (or at least delayed) via regular and balanced inclusion of antioxidants in the human diet (3).
The aim of this study was to determine the antioxidant potential of extracts from different avocado leaves.

Methods. Leaves of different genotypes (twelve) of avocado were collected in the southern state of Nuevo Leon, Mexico. Avocado leaves were pulverized and dried at 60°C; subsequently, the extraction was performed using water and acetone (70%). These extracts were analyzed for phenolic compounds: hydrolysable phenols content by using the Folin-Ciocalteu colorimetric method, flavonoids and antioxidant capacity by both DPPH$^{\bullet}$ and TEAC methods.

Results. Aqueous samples results by DPPH$^{\bullet}$ showed that Amarillo and Criollo Campeón leaves had the highest antioxidant capacity above 300 gallic acid equivalents, while Leonor leaves had the lowest result with approximately 22 gallic acid equivalents. On the other hand, in acetone samples were found that Pagua leaves had the highest capacity exceeding 400 gallic acid equivalents. El Cuerno leaves presented almost 100 gallic acid equivalent.
TEAC results helped us to confirm the information presented above. Amarillo (650 Trolox equivalents) and Criollo Campeón (653 Trolox equivalents) species had the highest capacity, although in DPPH$^{\bullet}$ results Amarillo was above Criollo Campeón content. The lowest outcome was found in Leonor leaves. Just as the aqueous samples, acetone extractions showed that Pagua leaves had the highest antioxidant capacity with Trolox equivalents above 650, whereas El Cuerno leaves presented 371 Trolox equivalents approximately.

Comparing these results with the total phenolic content we can confirm that they are directly related to the antioxidant capacity. Amarillo leaves in the aqueous extraction presented the highest antioxidant capacity in the DPPH$^{\bullet}$ method, and the second highest capacity in TEAC analysis, which is the same result obtained for the total phenolic content. We obtained the same result for Leonor leaves, being this sample the one with the lowest concentration of phenolic compounds. Equally, acetone samples presented the highest concentration for Pagua leaves and the lowest concentration for El Cuerno, the same outcomes showed in DPPH$^{\bullet}$ and TEAC methods.

Conclusions. Avocado leaves could be considerate a good source for antioxidants extraction such as phenolic compounds, to prevent their oxidation on foods. Thus, phenolic compounds can be considered to be substances of added-value, thereby justifying their isolation from residual or plant sources and their use in various processes.

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